



FINAL EXAMINATION
MODEL QUESTION PAPER
PAPER – 14

SET - 2
TERM – DECEMBER 2024
SYLLABUS 2022

STRATEGIC FINANCIAL MANAGEMENT

Time Allowed: 3 Hours

Full Marks: 100

The figures in the margin on the right side indicate full marks.

SECTION – A (Compulsory)

1. Choose the correct option:

[15 x 2 = 30]

- (i) The Profitability Index of a Project is 1.28 and its cost of Investment ₹2,50,000. The NPV of the project is _____.
(a) ₹75,000
(b) ₹80,000
(c) ₹70,000
(d) ₹65,000
- (ii) If expected NPV = ₹1,20,000 and S.D = ₹30,000, then coefficient of variation will be _____.
(a) 25%
(b) 20%
(c) 30%
(d) 40%
- (iii) Which of the following techniques is the most suitable, when NPV and IRR lead to inconsistent ranking due to life disparity between two or more projects?
(a) Modified Net Present Value
(b) Modified Internal Rate of Return
(c) Uniform Annual Equivalent Cost / Benefit
(d) Discounted Payback Period.
- (iv) The value of beta of a security does not depend on _____.
(a) Standard deviation of the security
(b) Standard deviation of the market
(c) Correlation between the security and the market
(d) Risk free rate
- (v) The Chartist believes that charts
(a) Spot current trend for buying and selling
(b) Indicate the future action to be taken
(c) Shows historical movements
(d) All of the above.
- (vi) A company has an ROE of 0.24 and book value of ₹25.38, the EPS for the company is _____.
(a) 6.09
(b) 7.25
(c) 6.94
(d) 6.13



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- (vii) A bond with a par value of ₹1,000 has a 6% annual coupon rate. Interest is paid semi-annually and the price of the bond is ₹1,025, what is the current yield?
- (a) 3.0%
(b) 2.9%
(c) 6.2%
(d) 5.9%
- (viii) A certain mutual fund has a return of 17% with standard deviation of 3.5% and the sharpe ratio is 4. The risk free rate is
- (a) 12.5%
(b) 4 %
(c) 3%
(d) 7.5%
- (ix) Rate of inflation = 5.1%, $\beta=0.85$, Risk premium = 2.295%, Market return =12%. The real rate of return will be:
- (a) 4.2%
(b) 11.70%
(c) 6%
(d) 5.95%
- (x) Which of the following types of risk is most likely avoided by forming a diversified portfolio?
- (a) Total risk
(b) Systematic risk
(c) Non-systematic risk
(d) None
- (xi) An investor buys 100 shares of a sugar mill at ₹210 per share and at the same time writes a September 250 call at a premium of ₹20 per share. If expiration date price is ₹280, calculate the net gain/loss.
- (a) ₹20
(b) ₹40
(c) ₹60
(d) None of the above.
- (xii) _____ are underwritten and have a maturity of up to one year.
- (a) Note issuance facilities
(b) Medium term notes
(c) Commercial paper
(d) ADRs
- (xiii) The 6-month forward rate for US dollar against Rupee is quoted as ₹49.50 as opposed to a spot price of ₹48.85. The forward premium on US dollar is:



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- (a) 1.50%
(b) 3.08%
(c) 3.05%
(d) None of the above.
- (xiv) NFT stands for _____.
(a) Non-fungible token
(b) Non-fuel token
(c) Non-fractional token
(d) Non-fundamental token
- (xv) An Indian company's cost of production is ₹20/unit while its export price is \$1/ unit. If the \$ appreciates by 10% and the spot rate today is ₹40 per \$, what is the impact of transaction exposure?
(a) Increase in profit by ₹4 per unit.
(b) Decrease in profit by ₹4 per unit.
(c) No change in profit.
(d) Insufficient data.

SECTION – B

(Answer any 5 questions out of 7 questions given. Each question carries 14 marks.)

[5 x 14 = 70]

2. (a) S Ltd. has ₹10,00,000 allocated for capital budgeting purposes. The following proposals and associated profitability indexes have been determined as follows:

Project	Amount (₹)	Profitability Index
1	3,00,000	1.22
2	1,50,000	0.95
3	3,50,000	1.20
4	4,50,000	1.18
5	2,00,000	1.20
6	4,00,000	1.05

Recommend which of the above investments should be undertaken. Assume that projects are indivisible and there is no alternative use of the money allocated for capital budgeting. [7]

- (b) ABC leasing Ltd. is in the process of making out a proposal to lease certain equipment. The cost of the equipment is ₹10,00,000 and the period of lease is 10 years. The following additional information is available. You are required to determine the equated annual rent to be charged for the proposal.
- The machine can be depreciated fully over the 10 years on straight-line basis
 - The current effective tax rate is 40% and expects to go down to 30% from the beginning of the 6th year of the lease.
 - It is the normal objective to make a 10% post-tax return in its lease pricing



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- IV. Lease management fee of 1% of the value of the assets is usually collected from the lessees upon signing of the contract of lease, to cover the overhead costs related to processing of the proposal.
- V. Annual lease rents are collected at the beginning of every year. [7]

3. (a) Cyber Company is considering two mutually exclusive projects. Investment outlay of both the projects is ₹5,00,000 and each is expected to have a life of 5 years. Under three possible situations their annual cash flows and probabilities are as under:

Situation	Probabilities	Cash Flow	
		Project A	Project B
Good	0.3	6,00,000	5,00,000
Normal	0.4	4,00,000	4,00,000
Worse	0.3	2,00,000	3,00,000

The cost of capital is 9 per cent, recommend which project should be accepted. Justify with workings. [7]

- (b) From the balance sheet of India Trading Company Limited as at 31st March, 2024, the following figures have been extracted:

Share Capital	₹
9% Preference Share capital (₹100)	3,00,000
10,000 Equity Shares of ₹10 Each fully paid	1,00,000
10,000 Equity Shares of ₹10 Each ₹5 paid	50,000
10,000 Equity Shares of ₹10 Each ₹2.50 paid	25,000
	4,75,000
Reserve and Surplus:	
General Reserve	2,00,000
Profit and Loss account	50,000
	7,25,000

On a revaluation of assets on 31st March, 2024, it was found that they had appreciated by ₹75,000 over their book value in the aggregate.

The articles of association of the company provide that in case of liquidation, preference shareholders would have a further claim to 10 per cent of the surplus assets, if any.

Evaluate the value of the business through the values of preference shares and equity shares assuming that a liquidation of the company has to take place on 31st March, 2024, and that the expenses of winding up are nil. [7]

4. (a) A financial institution issues two types of bonds with one year and another three years' maturity respectively. The first, which pays ₹10,000 a year hence, is now selling for ₹8,929. The second which pays ₹100 next years, ₹100 after two years and ₹1,100 at the end of third year is now offered at ₹997.18. Calculate the implied rates of these two bonds. [7]



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- (b) Orange purchased 200 units of Oxygen Mutual fund at ₹45 per unit of 31st December 2022. In 2023, he received ₹1.00 as dividend per unit and a capital gains distribution of ₹2 per unit. Required:
- (i) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit
- (ii) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit and all dividends and capital gains distributions have been reinvested at an average price of ₹46.00 per unit.
- Ignore Taxation. [7]

5. (a) Mr. Shiva has estimated probable returns under different macroeconomic conditions for the following three stocks.

Name of the stocks	Current market price (₹)	Rates of return under different macroeconomic scenarios (%)		
		Recession	Moderate growth	Boom
X	10	-12	15	35
Y	30	20	12	-5
Z	80	18	20	15

Mr. Shiva is exploring if it is possible to make any arbitrage profits from the above information. Using the above information recommend an arbitrage portfolio and suggest the payoffs under different economic scenarios. [7]

- (b) Based on the data provided below, compare the performance of the portfolios using the Jensen model of the differential return.

Portfolio	Realized Return on Portfolio (%)	Portfolio (β)
1	14.5	1.2
2	9.5	0.8
3	18.0	1.4

Return on market portfolio, $R_m = 12\%$ Risk-free rate of interest = 6% . [7]

6. (a) Shares of Sandeep Ltd. are being quoted at ₹600. 3-Months Futures Contract Rate is ₹636 per share for a lot size of 500 shares. If the Sandeep Ltd. Is not expected to distribute any dividend in the interim, risk free rate of return is 9% , recommend course of action for a trader in shares. If the 3-Months Futures Contract Rate is ₹600, suggest the course of action.
- [Value of $e^{0.0225} = 1.022755$] [7]

- (b) Given the following: Amount (₹)

Strike price	200
Current stock price	185
Risk free rate of interest	5% p.a.



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- (i) Calculate the theoretical minimum price of a European put option after 6 months.
(ii) If European put option price is ₹5, then assess an arbitrageur profit.
[Value of $e^{0.05 \times 0.5} = 1.02532$]

[7]

7. (a) Following are the details of cash inflows and outflows in foreign currency denominations of M Co., an Indian export firm, which have no foreign subsidiaries —

Currency	Inflow	Outflow	Spot rate	Forward rate
US \$	4,00,00,000	2,00,00,000	48.01	48.82
French Franc (F Fr)	2,00,00,000	80,00,000	7.45	8.12
UK £	3,00,00,000	2,00,00,000	75.57	75.98
Japanese Yen	1,50,00,000	2,50,00,000	3.20	2.40

- (i) Determine the net exposure of each foreign currency in terms of Rupees.
(ii) Suggest any of the exposure positions off-setting to some extent.

[7]

- (b) Evaluation of Forward Premium – Encashing Foreign Currency Deposits – The following 2 – way quotes appear in the foreign exchange market –

	Spot Rate	2-Months Forward
₹/ US \$	₹46.00/ ₹46.25	₹47.00/ ₹47.50

Required –

- (i) Evaluate how many US Dollars should a firm sell to get ₹25 Lakhs after two months?
(ii) Evaluate how many Rupees is the firm required to pay to obtain US \$2,00,000 in the spot market?
(iii) Assume the firm has US \$ 69,000 current account's earning interest. ROI on Rupee Investment is 10% p.a. Examine whether the firm encash the US \$ now, 2 months later.

[7]

8. Short notes on:

- (a) Discuss the advantages of Digital Finance.
(b) Develop the concept of Euro Notes.
(c) Analyze the problems of Securitization.

[5]

[5]

[4]

**STRATEGIC FINANCIAL MANAGEMENT****Time Allowed: 3 Hours****Full Marks: 100**

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SECTION – A (Compulsory)

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- (ix) Rate of inflation = 5.1%, $\beta=0.85$, Risk premium = 2.295%, Market return =12%. The real rate of return will be:
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- (xiii) The 6-month forward rate for US dollar against Rupee is quoted as ₹49.50 as opposed to a spot price of ₹48.85. The forward premium on US dollar is:
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(a) Increase in profit by ₹4 per unit.
(b) Decrease in profit by ₹4 per unit.
(c) No change in profit.
(d) Insufficient data.

Answer:

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
c	a	c	d	d	a	d	c	a
(x)	(xi)	(xii)	(xiii)	(xiv)	(xv)			
c	c	a	d	a	a			

SECTION – B

(Answer any 5 questions out of 7 questions given. Each question carries 14 marks.)

[5 x 14 = 70]

2. (a) S Ltd. has ₹10,00,000 allocated for capital budgeting purposes. The following proposals and associated profitability indexes have been determined as follows:

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2	1,50,000	0.95
3	3,50,000	1.20
4	4,50,000	1.18
5	2,00,000	1.20
6	4,00,000	1.05

Recommend which of the above investments should be undertaken? Assume that projects are indivisible and there is no alternative use of the money allocated for capital budgeting.

[7]



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Answer:

Statement showing ranking of projects on the basis of Profitability Index

Project	Amount	P.I.	Rank
1	3,00,000	1.22	1
2	1,50,000	0.95	5
3	3,50,000	1.20	2
4	4,50,000	1.18	3
5	2,00,000	1.20	2
6	4,00,000	1.05	4

Assuming that projects are indivisible and there is no alternative use of the money allocated for capital budgeting on the basis of P.I., the S Ltd., is advised to undertake investment in projects 1, 3 and 5. However, among the alternative projects the allocation should be made to the projects which adds most to the shareholder's wealth.

The NPV method, by its definition, will always select such projects.

Statement showing NPV of the projects

Project	Amount (₹)	P.I.	Cash inflows of project (₹)	N.P.V. of Project (₹)
(i)	(ii)	(iii)	(iv) = [(ii) × (iii)]	(v) = [(iv) – (ii)]
1	3,00,000	1.22	3,66,000	66,000
2	1,50,000	0.95	1,42,500	(-)7,500
3	3,50,000	1.20	4,20,000	70,000
4	4,50,000	1.18	5,31,000	81,000
5	2,00,000	1.20	2,40,000	40,000
6	4,00,000	1.05	4,20,000	20,000

The allocation of funds to the projects 1, 3 and 5 (as selected above on the basis of P.I.) will give N.P.V. of ₹1,76,000 and ₹1,50,000 will remain unspent.

However, the N.P.V. of the projects 3, 4 and 5 is ₹1,91,000 which is more than the N.P.V. of projects 1, 3 and 5. Further, by undertaking projects 3, 4 and 5 no money will remain unspent. Therefore, S Ltd. is advised to undertake investments in projects 3, 4 and 5.

- (b) ABC leasing Ltd. is in the process of making out a proposal to lease certain equipment. The cost of the equipment is ₹10,00,000 and the period of lease is 10 years. The following additional information is available. You are required to determine the equated annual rent to be charged for the proposal.

- I. The machine can be depreciated fully over the 10 years on straight-line basis
- II. The current effective tax rate is 40% and expects to go down to 30% from the beginning of the 6th year of the lease.



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- III. It is the normal objective to make a 10% post-tax return in its lease pricing
- IV. Lease management fee of 1% of the value of the assets is usually collected from the lessees upon signing of the contract of lease, to cover the overhead costs related to processing of the proposal.
- V. Annual lease rents are collected at the beginning of every year. [7]

Answer:

Present value of cash outflow:

Cost of equipment ₹10,00,000

Let X be the equated annual lease rent

Present value of lease rentals after tax (Figures in ₹)

Year	Lease rent	Tax	Net cash inflows	PV @ 10%	Present value
0	X	-	X	1.0000	X
1-5	X	0.4X	0.6X	3.7908	2.2745X
6-9	X	0.3X	0.7X	1.9680	1.3776X
10	0	0.3X	(0.3X)	0.3855	(0.1158X)

Present value of total recurring cash inflows = 4.5364X

Calculation of tax shield on depreciation (Figures in ₹)

Year	Depreciation	Tax benefit	PV @ 10 %	Present value
1-5	1,00,000	40,000	3.7908	1,51,600
6-10	1,00,000	30,000	2.3540	70,620
				2,22,220

At 10%, Inflows = Outflows or, 1000000 = 4.5364X + 222220

X = 1,71,453.

Therefore, equated annual rent is ₹1,71,453.

3. (a) Cyber Company is considering two mutually exclusive projects. Investment outlay of both the projects is ₹5,00,000 and each is expected to have a life of 5 years. Under three possible situations their annual cash flows and probabilities are as under:

Situation	Probabilities	Cash Flow	
		Project A	Project B
Good	0.3	6,00,000	5,00,000
Normal	0.4	4,00,000	4,00,000
Worse	0.3	2,00,000	3,00,000

The cost of capital is 9 per cent, recommend which project should be accepted. Justify with workings. [7]



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Answer:

Project A:

$$\text{Expected Net Cash flow (ENCF)} = 0.3(6,00,000) + 0.4(4,00,000) + 0.3(2,00,000) = 4,00,000$$

$$\sigma^2 = 0.3(6,00,000 - 4,00,000)^2 + 0.4(4,00,000 - 4,00,000)^2 + 0.3(2,00,000 - 4,00,000)^2$$

$$\sigma^2 = 24,00,00,00,000$$

$$\sigma = 1,54,919.33$$

$$\text{ENPV} = 4,00,000 \times 3.890 = 15,56,000$$

$$\text{NPV} = 15,56,000 - 5,00,000 = 10,56,000$$

Project B:

$$\text{ENCF} = 0.3 (5,00,000) + 0.4 (4,00,000) + 0.3 (3,00,000) = 4,00,000$$

$$\sigma^2 = 0.3(5,00,000 - 4,00,000)^2 + 0.4(4,00,000 - 4,00,000)^2 + 0.3(3,00,000 - 4,00,000)^2$$

$$\sigma^2 = 6,00,00,00,000$$

$$\sigma = 77,459.66$$

$$\text{ENPV} = 4,00,000 \times 3.890 = 15,56,000$$

$$\text{NPV} = 15,56,000 - 5,00,000 = 10,56,000$$

Recommendation:

NPV in both projects being the same, the project should be decided on the basis of standard deviation and hence project 'B' should be accepted having lower standard deviation, means less risky.

(b) From the balance sheet of India Trading Company Limited as at 31st March, 2024, the following figures have been extracted:

Share Capital	₹
9% Preference Share capital (₹100)	3,00,000
10,000 Equity Shares of ₹10 Each fully paid	1,00,000
10,000 Equity Shares of ₹10 Each ₹5 paid	50,000
10,000 Equity Shares of ₹10 Each ₹2.50 paid	25,000
	4,75,000
Reserve and Surplus:	
General Reserve	2,00,000
Profit and Loss account	50,000
	7,25,000

On a revaluation of assets on 31st March, 2024, it was found that they had appreciated by ₹75,000 over their book value in the aggregate.

The articles of association of the company provide that in case of liquidation, preference shareholders would have a further claim to 10 percent of the surplus assets, if any.



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Evaluate the value of the business through the values of preference shares and equity shares assuming that a liquidation of the company has to take place on 31st March, 2024, and that the expenses of winding up are nil. [7]

Answer:

Valuation of shares

Particulars	₹
Book value of assets	7,25,000
Appreciation	75,000
Total	8,00,000
Less: Paid up capital	- 4,75,000
Surplus assets	3,25,000
Share of preference shareholders in Surplus assets	32,500
Share of equity shareholders in surplus assets	2,92,500
Share per equity share in surplus assets: 2,92,500/30,000	9.75
Share per preference share in surplus assets: 32,500/3,000	10.83
Value preference share: 100 + 10.83 =	110.83
Value per equity share (₹10 paid): 10 + 9.75 =	19.75
Value per equity share (₹5 paid): 5 + 9.75 =	14.75
Value per equity share (₹2.50 paid): 2.50 + 9.75 =	12.25

4. (a) A financial institution issues two types of bonds with one year and another three years' maturity respectively. The first, which pays ₹10,000 a year hence, is now selling for ₹8,929. The second which pays ₹100 next years, ₹100 after two years and ₹1,100 at the end of third year is now offered at ₹997.18. Calculate the implied rates of these two bonds. [7]

Answer:

Assume k_1 and k_2 are the implied interest rates on bonds I and II, respectively.

Bond I:

$$₹10,000 \text{ PVIF}(k_1, 1) = ₹8929$$

$$\text{or } ₹10,000 / (1+k_1) = ₹8929 \text{ or } ₹8929 (1+k_1) = ₹10,000$$

$$\text{or Solving, we get } k_1 = 12\%$$

Bond II:

$$₹977.18 = 100 \text{ PVIF}(k_2, 1) + 100 \text{ PVIF}(k_2, 2) + ₹1100 \text{ PVIF}(k_2, 3) \text{ or } 977.18 = 100/(1+k_2) + 100/(1+k_2)^2 + 1100/(1+k_2)^3$$

$$\text{Solving, we get } k_2 = 10.1\%$$

Implied interest rate on bond, I and II are, respectively, 12% and 10.1%.

- (b) Orange purchased 200 units of Oxygen Mutual fund at ₹45 per unit of 31st December 2022. In 2023, he received ₹1.00 as dividend per unit and a capital gains distribution of ₹2 per unit. Required:



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(i) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit

(ii) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit and all dividends and capital gains distributions have been reinvested at an average price of ₹46.00 per unit.

Ignore Taxation.

[7]

Answer:

(i) Returns for the year (All changes on a Per-Unit Basis)

Change in price:	$₹48 - ₹45 =$	₹3.00
Dividends received:		₹1.00
Capital gains distribution		₹2.00
Total return		₹6.00
Holding period return:	$(₹6.00 / ₹45) \times 100 = 13.33\%$	

(ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @ (₹46/ unit)

Dividend + Capital gains per unit	$= ₹1.00 + ₹2.00 = ₹3.00$
Total received from 200 units	$= ₹3.00 \times 200 = ₹600/-$
Additional units acquired	$₹600 / ₹46 = 13.04 \text{ Units}$
Total No. of Units	$200 \text{ units} + 13.04 \text{ units} = 213.04 \text{ units}$
Value of 213.04 units held at the end of the year	$= 213.04 \text{ units} \times ₹48 = ₹10,225.92$
Price paid for 200 units at the beginning of the year	$= 200 \text{ units} \times ₹45 = ₹9,000.00$
Holding Period Return ₹ (10,225.92 – 9,000.00)	$= ₹1,225.92$
Holding Period Return	$₹1,225 / ₹9,000 \times 100 = 13.62\%$

5. (a) Mr. Shiva has estimated probable returns under different macroeconomic conditions for the following three stocks.

Name of the stocks	Current market price (₹)	Rates of return under different macroeconomic scenarios (%)		
		Recession	Moderate growth	Boom
X	10	-12	15	35
Y	30	20	12	-5
Z	80	18	20	15



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Mr. Shiva is exploring if it is possible to make any arbitrage profits from the above information.

Using the above information recommend an arbitrage portfolio and suggest the payoffs under different economic scenarios. [7]

Answer:

The rates of return under different scenarios have been changed to rupee payoffs per share as indicated below:

Name of the stocks	Current market price (₹)	Rates of return under different macroeconomic scenarios		
		Recession	Moderate growth	Boom
X	10	$10(1 - 0.12) = 8.800$	$10(1 + 0.15) = 11.50$	$10(1 + 0.35) = 13.50$
Y	30	$30(1 + 0.20) = 36.00$	$30(1 + 0.12) = 33.60$	$30(1 - 0.05) = 28.50$
Z	80	$80(1 + 0.18) = 94.40$	$80(1 + 0.20) = 96.00$	$80(1 + 0.15) = 92.00$

Construction of an arbitrage portfolio requires formation of a net zero investment portfolio.

Second, essential condition is that portfolio return must be a positive one.

If we short sell 2 shares of X and Y and long one share of Z it will be $= 10 \times (-2) + 30 \times (-2) + 80 \times 1 = 0$

The payoffs from this arbitrage portfolio under different market conditions are stated below:

Stocks	Price (₹)	No of shares	Cash flow	Rates of return under different macroeconomic scenarios		
				Recession	Moderate growth	Boom
X	10	-2	-20	-17.60	-23.00	-27.00
Y	30	-2	-60	-72.00	-67.20	-57.00
Z	80	+1	+80	+94.40	+96.00	+92.00
Net Payoff				+4.80	+5.80	+8.00

Net payoff from the portfolio, it is clear that there is an arbitrage profit under all the market conditions.

(b) Based on the data provided below, compare the performance of the portfolios using the Jensen model of the differential return.

Portfolio	Realized Return on Portfolio (%)	Portfolio (β)
1	14.5	1.2
2	9.5	0.8
3	18.0	1.4

Return on market portfolio, $R_m = 12\%$ Risk-free rate of interest = 6% .

[7]



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Answer:

Required return based on CAPM for the three portfolios would be:

Portfolio 1: $6\% + (12\% - 6\%) \times 1.2 = 13.2\%$

Portfolio 2: $6\% + (12\% - 6\%) \times 0.8 = 10.8\%$

Portfolio 3: $6\% + (12\% - 6\%) \times 1.4 = 14.4\%$

The difference between actually realized return and return under CAPM is portfolio alpha (α) and they are as follows:

Portfolio 1 (α) = $14.5 - 13.2 = +1.30\%$

Portfolio 2 (α) = $9.5 - 10.8 = -1.30\%$

Portfolio 3 (α) = $18.0 - 14.4 = +3.60\%$

The best performance is of the portfolio manager 3 having the highest value of positive alpha.

The next best is portfolio 1. Portfolio 2 is underperforming as its alpha value is negative.

6. (a) Shares of Sandeep Ltd. are being quoted at ₹600. 3-Months Futures Contract Rate is ₹636 per share for a lot size of 500 shares. If the Sandeep Ltd. Is not expected to distribute any dividend in the interim, risk free rate of return is 9%, recommend course of action for a trader in shares.

If the 3-Months Futures Contract Rate is ₹600, suggest the course of action.

[Value of $e^{0.0225} = 1.022755$]

[7]

Answer:

Computation of Theoretical Forward Rate [TFP]

Particulars	Value
Spot Price [S_x]	₹600
Risk Free Interest Rate [r]	9% or 0.09
Period [t]	3 Months or 3/12 yrs i.e. 0.25
Theoretical Forward Rate [TFP_x] = $S \times e^{rt}$ = ₹600 $\times e^{0.09 \times 0.25}$ = ₹600 $\times e^{0.0225}$ = ₹600 $\times 1.022755$	613.653

Evaluation and Suggested Course of Action

Particulars	Case A	Case B
3-Months Futures Contract Rate [AFP_x]	₹636	₹600
TFP_x Vs. AFP_x	AFP_x is Higher	AFP_x is Lower
Valuation in Futures Market	Overvalued	Undervalued
Action	Buy Spot. Sell Future	Sell Spot. Buy Future



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(b) Given the following: Amount (₹)

Strike price	200
Current stock price	185
Risk free rate of interest	5% p.a.

(i) Calculate the theoretical minimum price of a European put option after 6 months.

(ii) If European put option price is ₹5, then assess an arbitrageur make profit.

[Value of $e^{0.05 \times 0.5} = 1.02532$]

[7]

Answer:

(i) Computation of Theoretical Minimum Price

Particulars	Value
Exercise price	₹200
Current Stock Price	₹185
Risk Free Rate of Return (r)	5% or 0.05
Time (in years)	$6 \div 12 = 0.5$
Theoretical Minimum Price	$= \text{Present Value of Exercise Price} - \text{Current Stock Price}$ $= 200 \times e^{-rt} - 185$ $= 200 \times e^{0.05 \times 0.5} - 185 = (200 \div 1.02532) - 185$ $= 195.0611 - 185 = 10.0611$

Inference: Since the Value of Put Option is more than the price of the Put Option, it is underpriced and the recommended action will be to Buy the Put Option.

(ii) Cash Flows to make Profit for the Arbitrageur Activity Flow:

- Arbitrageur can borrow the amount required to buy the Put Option and Stock at the rate of 5% p.a. for 6 months.
- Buy Put Option.
- Take the opposite position and buy stock at spot price.
- At the end of six months, exercise the Put option and realise the receipts.
- Pay the amount of Borrowing together with Interest.

Particulars	Time	₹
1. Borrow at the rate of 5% for 6 months $[185+5]$	T_0	190
2. Buy Put Option	T_0	(5)
3. Buy Stock at Spot Price	T_0	(185)
4. Exercise the Put Option and realise the Sale Proceeds	T_1	200
5. Repay the amount of Borrowing together with Interest $[190 \times e^{0.05 \times 0.5}] = [190 \times 1.02532]$	T_1	194.81
6. Net Gain made $[(4) - (5)]$	T_1	5.19

Note: The amount of gain is the minimum amount and will Increase with every Increase in Spot Price



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as on the Exercise Date.

7. (a) Following are the details of cash inflows and outflows in foreign currency denominations of M Co., an Indian export firm, which have no foreign subsidiaries —

Currency	Inflow	Outflow	Spot rate	Forward rate
US \$	4,00,00,000	2,00,00,000	48.01	48.82
French Franc (F Fr)	2,00,00,000	80,00,000	7.45	8.12
UK £	3,00,00,000	2,00,00,000	75.57	75.98
Japanese Yen	1,50,00,000	2,50,00,000	3.20	2.40

- (i) Determine the net exposure of each foreign currency in terms of Rupees.

- (ii) Suggest any of the exposure positions off-setting to some extent.

[7]

Answer:

- (i) Computation of Net Exposure

Particulars	US \$	F Fr	UK £	Japan Yen
Inflow (in Lakhs)	400.00	200.00	300.00	150.00
Less: Outflow	(200.00)	(80.00)	(200.00)	(250.00)
Net Exposure (Foreign Currency Terms)	200.00	120.00	100.00	(100.00)
Spot Exchange Rate	48.01	7.45	75.57	3.20
Net Exposure (in Rupee Terms based on Spot Exchange Rate)	9602	894	7557	(32)
	[200 × 48.01]	[120 × 7.45]	[100 × 75.57]	[100 × 3.20/10]

Particulars	US \$	F Fr	UK£	Japan Yen
Forward Rate [₹/ FC]	48.82	8.12	75.98	2.40
Less: Spot Exchange Rate [₹/ FC]	48.01	7.45	75.57	3.20
Forward Premium / (Discount)	0.81	0.67	0.41	(0.80)
Net Exposure in Rupee Terms based on extent of uncertainty represented by	162.0	80.4	41.0	(8.0)
	[200 × 0.81]	[120 × 0.67]	[100 × 0.41]	[(100) × (0.8)/10]
Premium/ (Discount)				

- (ii) Off Setting Position:

- (a) Net Exposure in all the currencies is offset by better forward rates. In the case of USD, F Fr and UK Pound, the net exposure is receivable, and the forward rates are quoted at a premium for these currencies.
- (b) In case of Japanese Yen, the net exposure is payable, and the forward rate is quoted at a discount. Therefore, a better forward rate is also offsetting the net payable in Japanese Yen.



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(b) Evaluation of Forward Premium – Encashing Foreign Currency Deposits – The following 2 – way quotes appear in the foreign exchange market –

	Spot Rate	2-Months Forward
₹/ US \$	₹46.00/ ₹46.25	₹47.00/ ₹47.50

Required –

- Evaluate how many US Dollars should a firm sell to get ₹25 Lakhs after two months?
 - Evaluate how many Rupees is the firm required to pay to obtain US \$2,00,000 in the spot market?
 - Assume the firm has US \$ 69,000 current account's earning interest. ROI on Rupee Investment is 10% p.a. Examine whether the firm encash the US \$ now, 2 months later.
- [7]

Answer:

(i) US dollars for ₹25 Lakhs in the forward Market

Action	Sell Foreign Currency in Forward Market
Relevant Rate	Forward Bid Rate = ₹47.00
US \$ Required to get ₹25,00,000	$₹25,00,000 \div ₹47.00 = \text{US } \$ 53,191.49$

(ii)Rs. Required to obtain US dollars 2,00,000 in the Spot Market

Action	Buy Foreign Currency in Spot Market
Relevant Rate	Spot Ask Rate = ₹46.25
Rupees Required to obtain US\$2,00,000	$\text{US } \$ 2,00,000 \times ₹46.25 = ₹92,50,000$

(iii)Evaluation of Investment in Rupees

Forward Premium (For Bid Rates)

$$= (\text{Forward Rate } ₹47 - \text{Spot Rate } ₹46) / \text{Spot Rate } ₹46 \times 12/2 \times 100 = 13.04\%$$

Observation and conclusion: Annualized Forward Premium for Bid Rates (13.04%) is greater than the Annual Return on Investment in Rupees (10%). Therefore, the firm should not encash its US \$ balance now. It should sell the US \$ in the forward market and encash them two months later.

Alternatively,

Particulars	Encash Now	Encash 2 Months Later
Relevant Rate	Spot Bid Rate = ₹46.00	Forward Bid Rate = ₹47.00
₹available for US \$ 69,000	₹31,74,000	₹32,43,000
Add: Interest for 2 Months (if converted now)	$₹52,900 (31,74,000 \times 10\% \times 2/12)$	Not Applicable
Amount Available after Two Months	₹32,26,900	₹32,43,000

Conclusion: Encashing two months later yields higher Rupee Return than encashing now and investing in

Rupee Deposits. Therefore, the firm should wait for two months to encash under forward market.

**STRATEGIC FINANCIAL MANAGEMENT****8. Short notes on:****(a) Discuss the advantages of Digital Finance.****[5]****Answer:**

Digital finance is the delivery of traditional financial services digitally, through devices such as computers, tablets and smartphones. In other words, digital finance is the term used to describe the impact of new technologies on the financial services industry.

Digital finance offers a whole host of benefits:

- i. Digital finance promises to boost the gross domestic product (GDP) of digitalized economies by providing convenient access to diverse range of financial products and services including credit facilities for individuals as well as small, medium and large businesses. This significantly increases aggregate expenditure thereby improving GDP figures. Digital finance can also lead to greater economic stability and increased financial intermediation, both for customers and for the economy.
- ii. Innovation in digital finance can have long-term positive effects for banking performance. In a study, Scott et al. (2017) have showed that adoption of SWIFT, a network-based technological infrastructure and set of standards for worldwide interbank telecommunication, has significant positive impact on bank's profitability in the long run in 29 countries across USA and Europe. They also have found that these profitability effects are greater for small banks than for large banks.
- iii. Digital finance also benefits governments by providing a platform to facilitate increase in aggregate expenditure which subsequently generates higher tax revenue arising from increase in the volume of financial transactions.
- iv. Digital finance also benefits the money market regulators. This is because full-scale digital finance adoption can significantly reduce the circulation of counterfeit currency and instances of money laundering etc.
- v. Through adoption of digital finance users enjoys benefits like greater control of personal finance, quick financial decision making, and the ability to make and receive payments within seconds.

(b) Develop the concept of Euro Notes.**[5]****Answer:**

Euro notes as a concept is different from syndicated bank credit and is different from Eurobonds in terms of its structure and maturity period. Euro notes command the price of a short-term instrument usually a few basis points over LIBOR and in many instances at sub-LIBOR levels. The documentation formalities are minimal (unlike in the case of syndicated credits or bond issues) and cost savings can be achieved on that score too. There are numerous- applications of basic concepts of Euro notes. These may be categorized under the following heads:

- i. Commercial Paper: These are short-term unsecured promissory notes which repay a fixed amount on a certain future date. Euro notes, underlying CP, are unsecured and stand on

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the general creditworthiness of the issuers. Referred as Euro Commercial Paper, these papers are not underwritten and have maturities up to one year, mostly by way of three-month or six-month paper.

- ii. Note Issuance Facilities (NIFs): A NIF is a medium-term legally binding commitment under which a borrower can issue short-term paper, of up to one year. The underlying currency is mostly US dollar. In a typical NIF program, the issuer instructs the lead manager to issue Euro notes at desired intervals. Maximum and minimum amounts of each issue are also specified.
- iii. Medium Term Notes: MTNs are defined as sequentially issued fixed interest securities which have a maturity of over one year. A typical MTN program enables an issuer to issue Euronotes for different maturities, from over one year up to the desired level of maturity. These are essentially fixed rate funding arrangements.

(c) Analyze the problems of Securitization.**[4]****Answer:**

In spite of its widely recognised benefits, securitization has a few limitations as well.

- i. Though theoretically the cost of securitizing assets is expected to be lower than the cost of mainstream funding, actually, securitization has proved to be a costly source, primarily in emerging markets due to the higher premium demanded by the investors and additional cost of rating and legal fees.
- ii. Setting up of an SPV requires high initial payment. Hence, there is a certain minimum economic size below which securitization is not cost effective.
- iii. Securitization transfers the problem of asset liability mismatch to investors. The profile of the repayment of
- iv. principal to investors in a pass-through transaction replicates the payback pattern of the assets.
- v. Securitization requires high level of disclosure of information. In addition to the disclosures required by regulators, there are disclosures to services, trustees, rating agencies, and in some circumstances, even to investors.